USER'S MANUAL

BPC-500-5820

Intel Pentium MMX/AMD K6-III BOX PC with CRT & Fast Ethernet

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FCC Class A

This equipment has been tested and found to comply with limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference installations. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause interference to radio or television equipment reception, which can be determi ned by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: -Reorient or relocate the receiving antenna

-Move the equipment away from the receiver

-Plug the equipment into an outlet on a circuit different from that to which the receiver is connected

-Consult the dealer or an experienced radio/television technician for additional suggestions

You are cautioned that any change or modifications to the equipment not expressly approve by the party responsible for compliance could void Your authority to operate such equipment.

Important Safety Instructions

1 Read these safety instructions carefully.

2 Keep this User's Manual for later reference.

3 Disconnect this equipment from any AC outlet before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning.

4. For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.

5 Keep this equipment away from humidity.

6 Put this equipment on a reliable surface during installation. Dropping it or letting it fall may cause damage.

7 The openings on the enclosure are for air convection. Protect the equipment from overheating. DO NOT COVER THE OPENINGS.

8 Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.

9 Position the power cord so that people cannot step on it. Do not place anything over the power cord.

10 All cautions and warnings on the equipment should be noted.

11 If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient overvoltage.

12 Never pour any liquid into an opening. This may cause fire or electrical shock.

13 Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.

14 If one of the following situations arises, get the equipment checked by service personnel:
a. The power cord or plug is damaged.

b. Liquid has penetrated into the equipment.
c. The equipment has been exposed to moisture.
d. The equipment does not work well, or you cannot get it to work according to the user's manual.
e. The equipment has been dropped and damaged.
f. The equipment has obvious signs of breakage.

DO NOT LEAVE THIS EQUIPMENT IN AN UNCONTROLLED ENVIRON-MENT WHERE THE STORAGE TEMPERATURE IS BELOW -20° C (-4° F) OR ABOVE 60° C (140° F). THIS MAY DAMAGE THE EQUIPMENT.

The sound pressure level at the operator's position according to IEC 704-1:1982 is no more than 70dB(A).

About this User's Manual

This User's Manual provides general information and installation instructions about the Box PC. This User's Manual is intended for experienced users and integrators with hardware knowledge of personal computers. If you are not sure about any description in this User's Manual, please consult your vendor before further handling.

Ordering Information

BPC-500-5820

Intel Pentium MMX/AMD K6-III BOX PC with CRT & Fast Ethernet

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Introduction

Box PC is targeted at many different application fields. By adopting Box PC, you can pinpoint specific markets, such as Thin Client, KIOSK, information booth, GSM Server, environment-critical and space-critical applications.

Box PC is specially designed for 3.5" and 5.25" Miniboards. The modular design of the Box PC is prepared for any OEM projects. Modular Box PC can be easily modified to fit many different applications according to customers' requests.

Compact-sized

The kernel of BPC-500-5820 is PIM-582, which is a 5.25" drive size single board computer. The whole system consumes only a few space.

CRT SVGA

BPC-500-5820 can support super 2D video performance and consumes minimal power.

Advanced storage solution

BPC-500-5820 comes with DiskOnChip®2000, a new generation of high performance single-chip Flash Disks. This unique data storage solution offers a better, faster and more cost-effective Flash Disk for applications with limited space and modest disk capacity requirements.

Trustworthy

The onboard Watchdog Timer can invoke an NMI or system RESET when your application loses control over the system.

Getting Started

This section will help you have your BPC-500-5820 up and running smoothly. For further information, please refer to PIM-582 User's Manual.

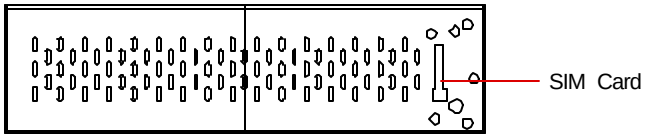
Packing List

Before up and running, please make sure the package contains all of following accessories.

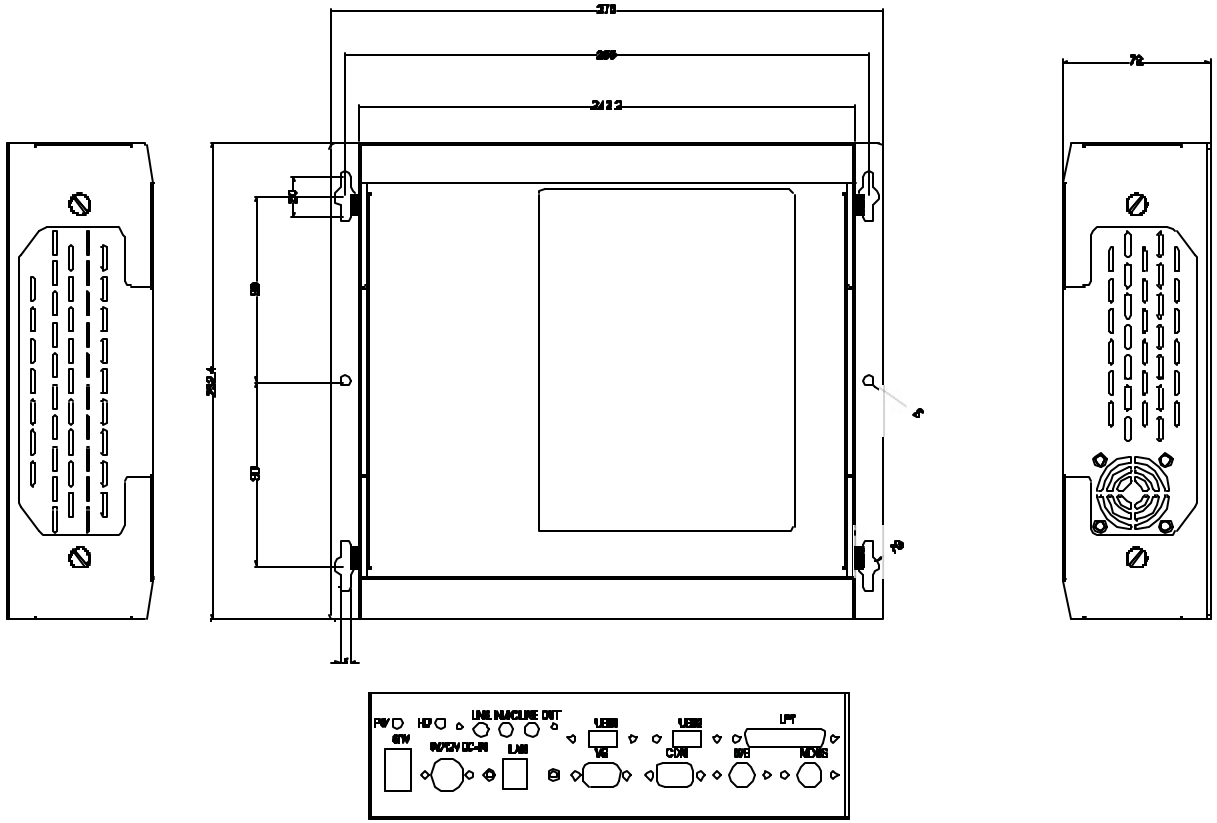
	Part Number
Manual PIM-582 Ver.1.2	4011058200120
Arbor Driver CD	4311013300220
PAD-PW-060A-2YD	5490106021900
CDROM IDE CABLE	3432061000000
IDE Flat Cable	3432061000430
Rubber Foot	3820761202000
1U CPU Cooler	2610500502000
Zipper bag No.8	4111101241700

Note : If any of the above items is damaged or missing, contact your vendor immediately.

Dimension



BPC-500-6250

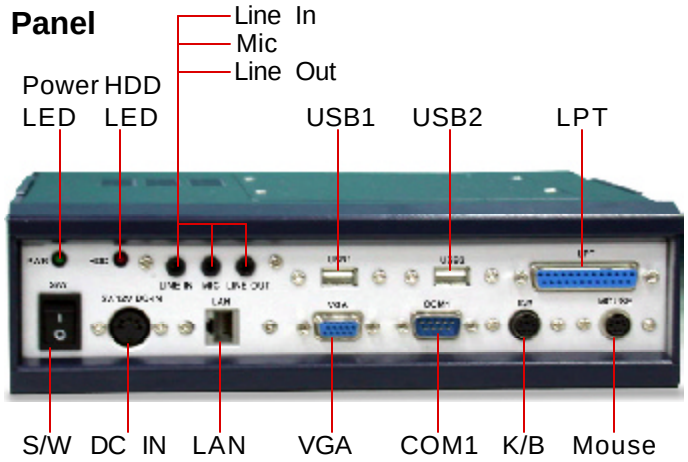


BPC-500-5820

Unit : mm

Overview

Rear Panel



Specification

BPC-500-5820

Intel Pentium MMX/AMD K6-III BOX PC with CRT & Fast Ethernet

System Board

CPU	Support socket 7 AMD K6-III Up to 500MHz, VIA Cyrix MII, Intel Pentium MMX (Default 233MHz)
System Memory	Up to 1GB SDRAM in two 168-pin DIMM sockets (Default 32MB)
System Chipset	SIS530 (Host, PCI, 3D AGP Video/Graphic)
BIOS	AWARD PCI/ISA PnP system BIOS
Display	C&T 69000 2MB DRAM on die HiQVideo Accelerator (PIM-582C) SiS-530 AGP, 2x AGP, 8MB shared memory (PIM-582)
Fast Ethernet	Realtek RTL8139
Watchdog Timer	Generates system RESET or NMI, 1, 2, 10, 20, 110, 220 seconds timer interval
Audio	ESS Solo-1 ES-19385, 3D sound on board
Flash Disk	1 x DiskOnChip 2000 socket up to 288MB bytes
Expansion Slot	PCI 32 bit, PC/104-16 bit
Serial Ports	3 x RS232C, 1 x RS232C/485(COM2)
Parallel Ports	SPP, EPP and ECP mode
USB	2 x USB ports (12Mb/s, 1.5Mb/s)
Support OS	Windows 95/98/NT/, Linux

External I/O

Serial Port	1 x DB9 (RS232C)
Parallel Port	1 x DB25 (SPP, EPP and ECP)
USB	2 x USB ports (12Mb/s, 1.5Mb/s)
LAN	1 x RJ45 Port (10/100Mbps)
Display	1 x DB15 Port
Keyboard	1 x PS2 mini DIN connector
Mouse	1 x PS2 mini DIN connector
Audio	Mic-in, Line-in, Line-out
LEDs	1 x Power, 1 x HDD
Switch	1 x Power ON/OFF

Power Adapter

DC Power Output	V1:+5VDC +/- 5% @7A max. V2:+12VDC +/- 10% @3Amax. load, 60W
AC Power Input	100-240V/50-60Hz, 1.5A max

Mechanical & Environment

Operating Temp.	0 to 40 degree C
Storage Temp.	-20 to 75 degree C
Dimension (WxDxH)	242 x 232 x 72mm (9.6" x 9.2" x 2.8")
Weight	2.2 kgs (4.84 lbs)
Mounting	Wallmount or Desktop

Basic installation

1. CPU
2. Memory module
3. Hard Disk Drive
4. Wall-mount kit

1

Removing Top Cover

1. On the both sides, locate the two screws that secure the top cover to the chassis.
2. Use screw drvier to remove the top cover screws. Keep the screws safely for later use.
3. Pull the top cover slightly upward the main unit until the side tabs are disengaged from chassis.
4. If you feel it's hard to pull up the top cover, just loose the screws that secure the main unit on each side a little bit. Then, you may pull up the top cover easily.

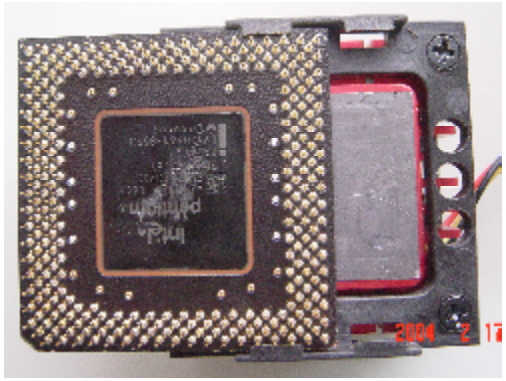
2

3

4

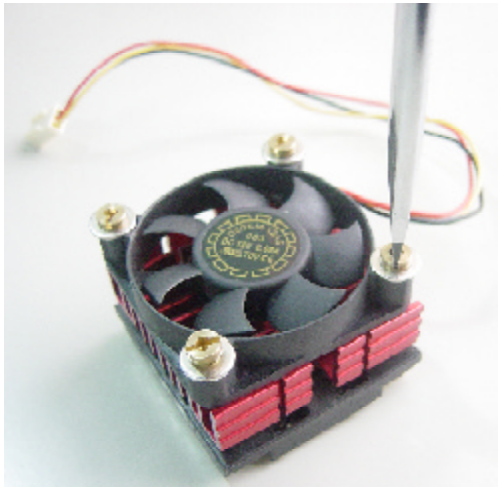
Installing CPU

1. Slide the CPU to the sideways of CPU cooler, lets the corners of CPU to match that of CPU cooler..



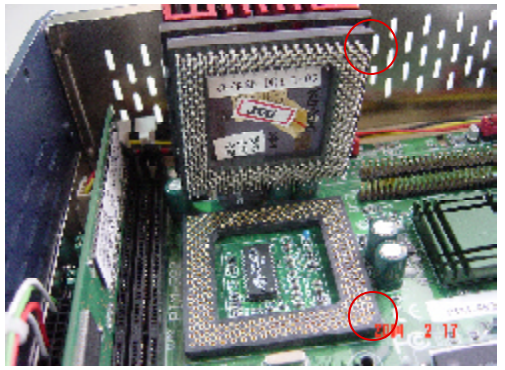
1

2. Screw on the screws on CPU cooler to secure CPU.



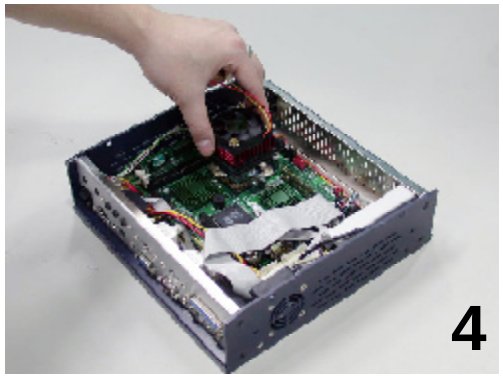
2

3. Direct the PIN A1 Corner of CPU to that of socket on CPU borad.



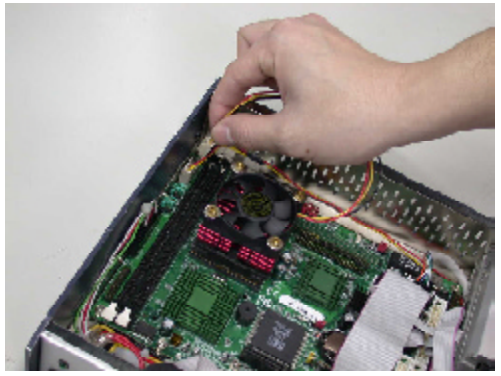
3

4. Install the CPU module onto CPU board.



4

5. Connect the CPU coller power.

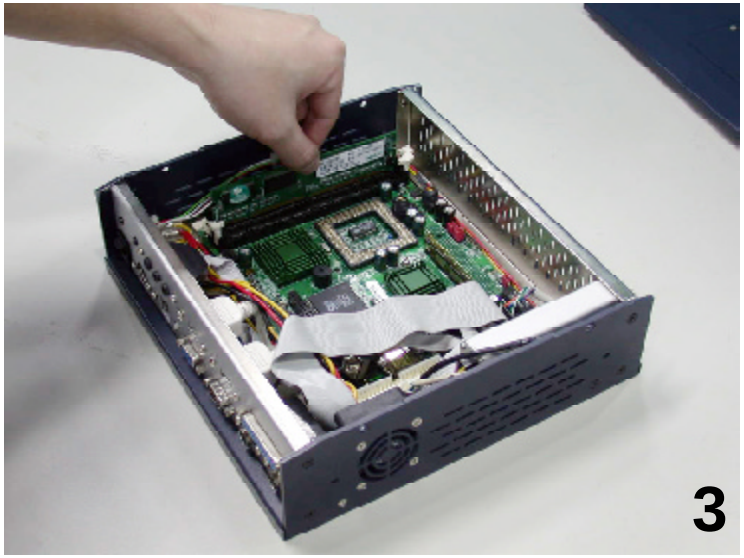


5

Installing Memory Module

1. Locate the two DIMM SDRAM sockets on the main board of the main unit.

2. Unlock the socket by pressing the retaining clips outward.

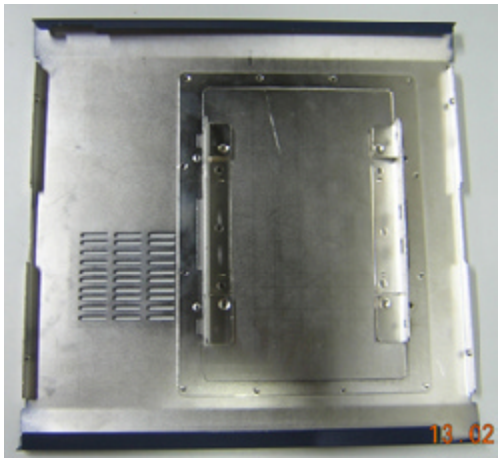


3. Align the DIMM on the socket and let the notches on the DIMM meets the break on socket. Firmly insert the DIMM into the socket until the retaining clips snap on and the DIMM is properly positioned. Then, lock the socket.

Note: Please note to install the memory module into DIMM1 if you have only one.

Installing Hard Disk Drive

1. Reverse the top cover into inner-side. You may see two tabs which use to house Hard Disk Drive.



1

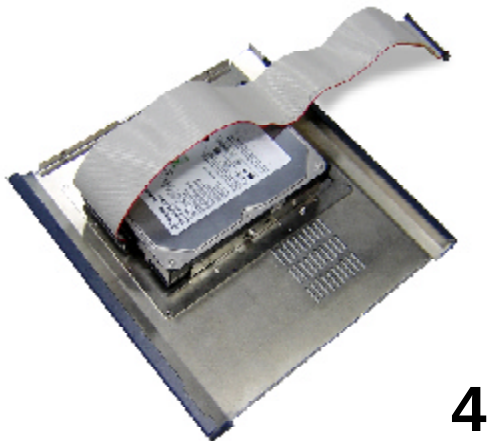
2. Place Hard Disk Drive into suitable position, let the drive screw holes to meet the screw holes on securing tabs of top cover.

2

3. Secure the drive with side screws.

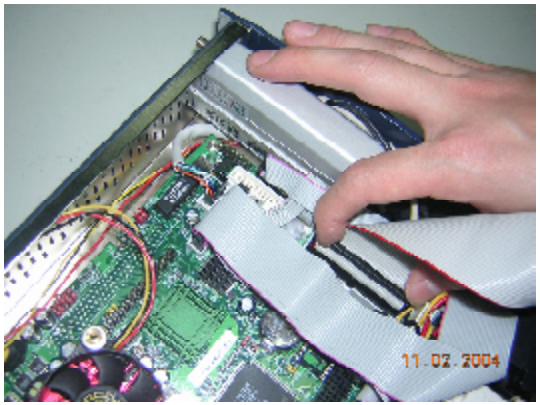
3

4. Connect IDE cable to the IDE connector on the drive.



4

5. Connect the other end of IDE cable into the IDE connector of the board on main unit.



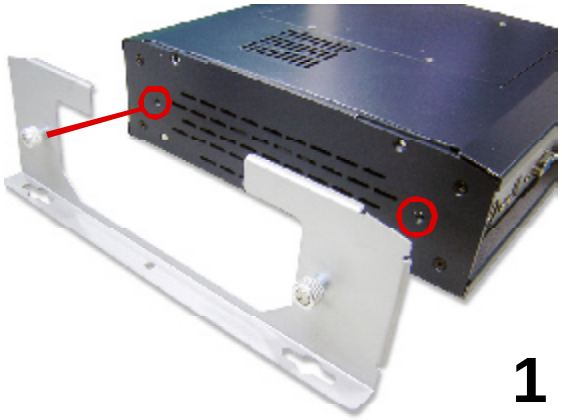
5

6. Connect the power connector to the power connector of Hard Disk Drive.

6

Installing Wall-Mount Bracket

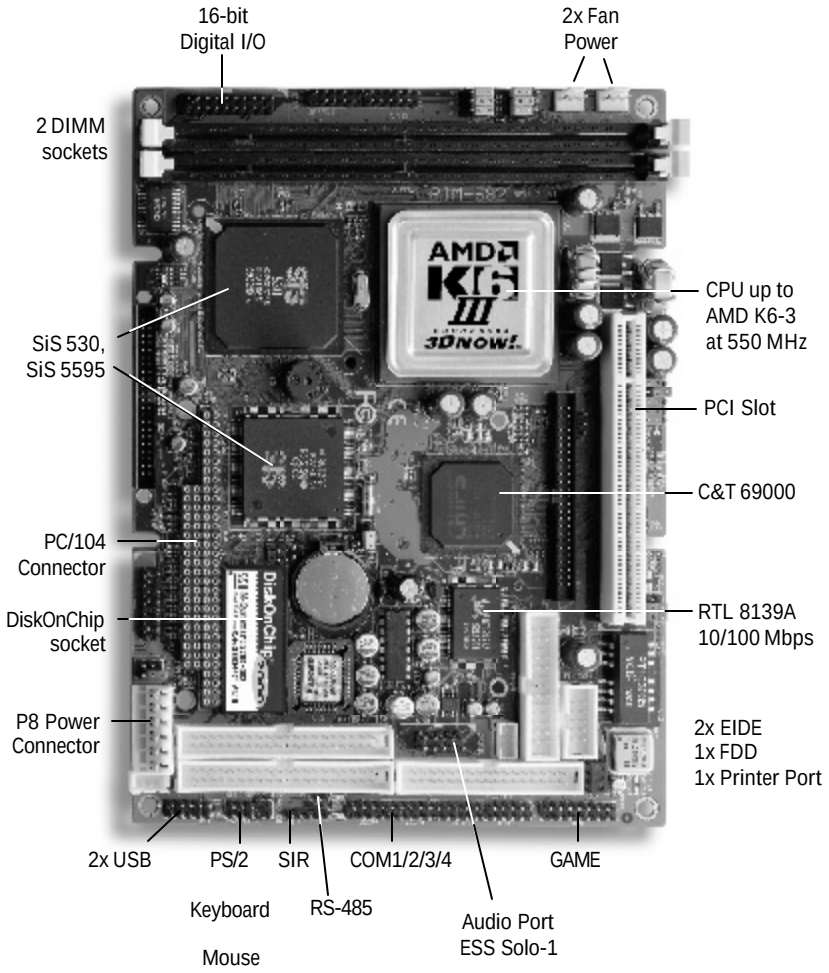
1. Locate the two screw holes on each side of Box PC, and match the screws on the wall-mount kit.



1

2. Screws onto the main unit.

2



Note: For further information, please refer to PIM-582 User's Manual.

System Resources

Interrupt Request (IRQ)

IRQ Address	Description
0	System timer
1	Standard 101/102-Key or Microsoft Natural Keyboard
2	Programmable interrupt controller
3	Communications Port (COM2)
4	Communications Port (COM1)
6	Standard Floppy Disk Controller
7	Printer Port (LPT1)
8	System CMOS/real time clock
10	IRQ Holder for PCI Steering
10	ESS Solo1 PCI AudioDrive (WDM)
11	Realtek RTL8139/810x Family Fast Ethernet NIC
11	IRQ Holder for PCI Steering
12	PS/2 Compatible Mouse Port
13	Numeric data processor
14	Primary IDE controller (dual fifo)
14	SiS 5513 Dual PCI IDE Controller
15	Secondary IDE controller (dual fifo)
15	SiS 5513 Dual PCI IDE Controller

Direct Memory Access (DMA)

DMA	Description
2	Standard Floppy Disk Controller
4	Direct memory access controller

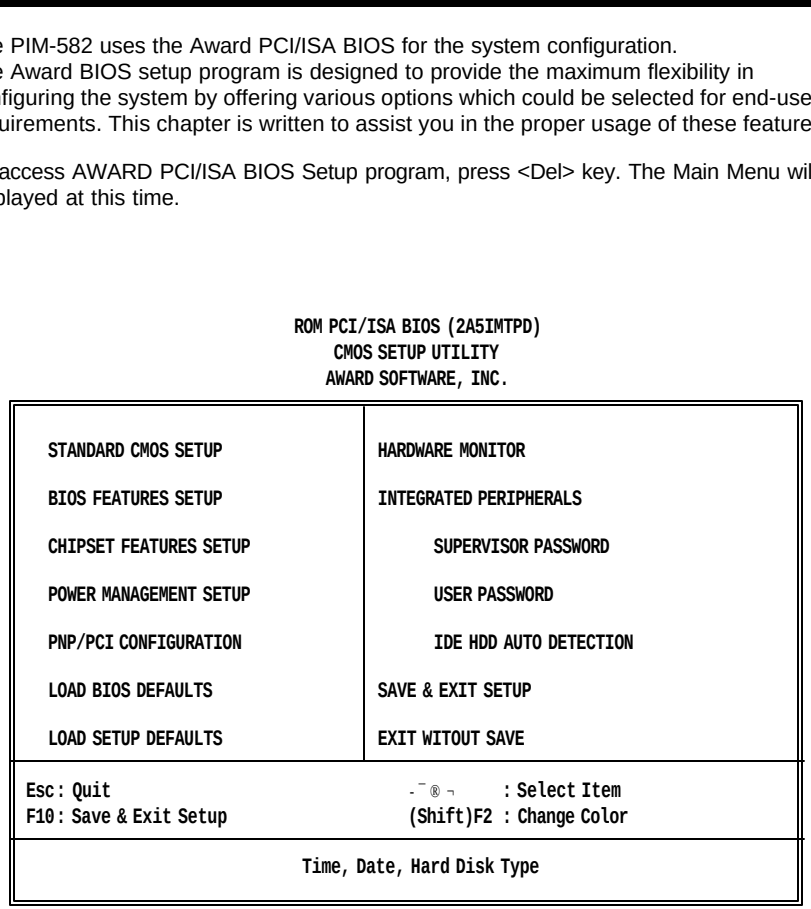
Ports Input/Output (IO)

I/O Address	Description
0020-0021	Programmable interrupt controller
0040-0043	System timer
0060-0060	Standard 101/102-Key or Microsoft Natural Keyboard
0061-0061	System speaker
0064-0064	Standard 101/102-Key or Microsoft Natural Keyboard
0070-0071	System CMOS/real time clock
0081-0083	Direct memory access controller
0087-0087	Direct memory access controller
0089-008B	Direct memory access controller
008F-0091	Direct memory access controller
00A0-00A1	Programmable interrupt controller
00C0-00DF	Direct memory access controller
00F0-00FF	Numeric data processor
0170-0177	SiS 5513 Dual PCI IDE Controller
0170-0177	Secondary IDE controller (dual fifo)
01F0-01F7	Primary IDE controller (dual fifo)
01F0-01F7	SiS 5513 Dual PCI IDE Controller
0201-0201	Gameport Joystick
0290-029F	PCI bus
02F8-02FF	Communications Port (COM2)
0376-0376	SiS 5513 Dual PCI IDE Controller
0376-0376	Secondary IDE controller (dual fifo)
0378-037F	Printer Port (LPT1)
03B0-03BB	Chips and Tech. 69000 PCI
03C0-03DF	Chips and Tech. 69000 PCI
03F2-03F5	Standard Floppy Disk Controller
03F6-03F6	Primary IDE controller (dual fifo)
03F6-03F6	SiS 5513 Dual PCI IDE Controller
03F8-03FF	Communications Port (COM1)
0480-048F	PCI bus
04D0-04D1	PCI bus
0CF8-0CFF	PCI bus
4000-400F	SiS 5513 Dual PCI IDE Controller
4000-4007	Primary IDE controller (dual fifo)
4008-400F	Secondary IDE controller (dual fifo)
5000-503F	Motherboard resources
D000-D0FF	Realtek RTL8139/810x Family Fast Ethernet NIC
D400-D43F	ESS Solo1 PCI AudioDrive (WDM)
D800-D80F	ESS Solo1 PCI AudioDrive (WDM)
DC00-DC0F	ESS Solo1 PCI AudioDrive (WDM)
E000-E003	ESS Solo1 PCI AudioDrive (WDM)
E400-E403	ESS Solo1 PCI AudioDrive (WDM)
0000-000F	Direct memory access controller

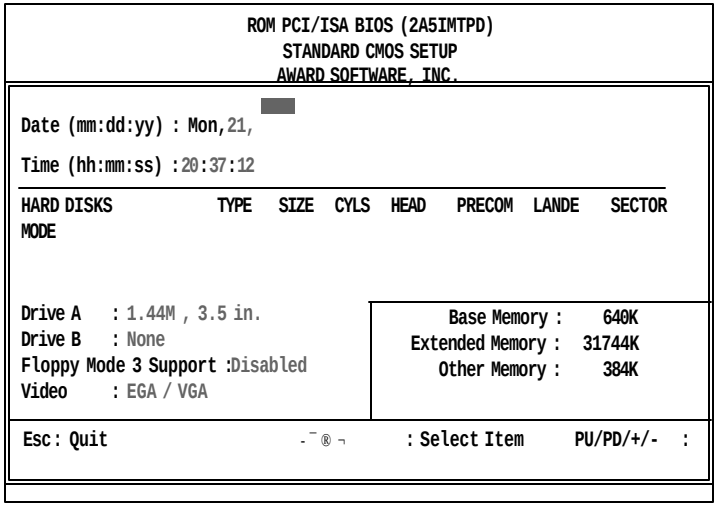
AWARD BIOS Setup

The PIM-582 uses the Award PCI/ISA BIOS for the system configuration.
The Award BIOS setup program is designed to provide the maximum flexibility in configuring the system by offering various options which could be selected for end-user requirements. This chapter is written to assist you in the proper usage of these features.

To access AWARD PCI/ISA BIOS Setup program, press <Del> key. The Main Menu will be displayed at this time.



Standard CMOS Setup


ROM PCI/ISA BIOS (2A5IMTPD)
STANDARD CMOS SETUP
AWARD SOFTWARE, INC.
Date (mm:dd:yy) : Mon, 21,
Time (hh:mm:ss) : 20:37:12
HARD DISKS TYPE SIZE CYLS HEAD PRECOM LANDE SECTOR
MODE
Drive A : 1.44M , 3.5 in.
Drive B : None
Floppy Mode 3 Support : Disabled
Video : EGA / VGA
Base Memory : 640K
Extended Memory : 31744K
Other Memory : 384K
Esc: Quit
: Select Item
PU/PD/+/-

Date
The BIOS determines the day of the week from the other date information; this field is for information only.

Time
The time format is based on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00. Press the ?or (key to move to the desired field . Press the PgUp or PgDn key to increment the setting, or type the desired value into the field.

Hard Disks
The BIOS supports up to four IDE drives. This section does not show information about other IDE devices, such as a CD-ROM drive, or about other hard drive types, such as SCSI drives.
***NOTE** : recommend that you select type AUTO for all drives.*

The BIOS can automatically detect the specifications and optimal operating mode of almost all IDE hard drives. When you select type AUTO for a hard drive, the BIOS detects its specifications during POST, every time the system boots. If you do not want to select drive type AUTO, other methods of selecting the drive type are available:

1. Match the specifications of your installed IDE hard drive(s) with the preprogrammed values for drive types 1 through 45.

2. Select USER and enter values into each drive parameter field.

3. Use the IDE HDD AUTO DECTECTION function in Setup.

Here is a brief explanation of drive specifications:

Type: The BIOS contains a table of pre-defined drive types. Each defined drive type has a specified number of cylinders, number of heads, write precompensation factor, landing zone, and number of sectors. Drives whose specifications do not accommodate any pre-defined type are classified as type USER.

Size: Disk drive capacity (approximate). Note that this size is usually slightly greater than the size of a formatted disk given by a disk-checking program.

Cyls: Number of cylinders

Head: Number of heads

Precomp: Write precompensation cylinder

Landz: Landing zone

Sector: Number of sectors

Mode: Auto, Normal, large, or LBA

Auto
The BIOS automatically determines the optimal mode.

Normal
Maximum number of cylinders, heads, and sectors supported are 1024, 16, and 63.

Large
For drives that do not support LBA and have more than 1024 cylinders. Applicable to only a few drives.

LBA
Logical Block Addressing. During drive accesses, the IDE controller transforms the data address described by sector, head, and cylinder number into a physical block address, significantly improving data transfer rates. For drives with greater than 1024 cylinders.

Drive A, B
Select the correct specifications for the diskette drive(s) installed in the computer.

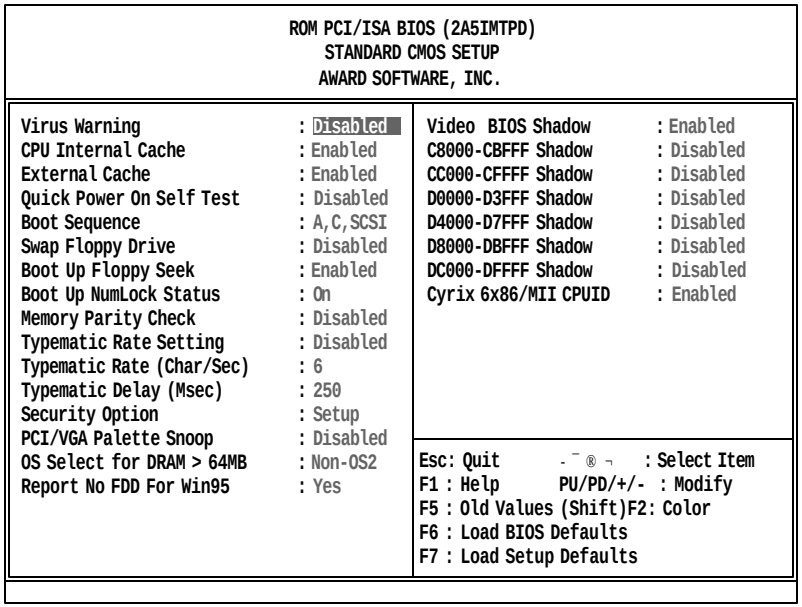
None : No diskette drive installed
360K : 5.25 in5-1/4 inch PC-type standard drive
1.2M : 5.25 in5-1/4 inch AT-type high-density drive
720K : 3.5 in3-1/2 inch double-sided drive
1.44M : 3.5 in3-1/2 inch double-sided drive
2.88M : 3.5 in3-1/2 inch double-sided drive

Floppy Mode 3 Support
Enables support for 1.2 MB format capacity on 3? disk drives.
This format is commonly used Japan.

Video Select the type of primary video subsystem in your computer. The BIOS usually detects the correct video type automatically. The BIOS supports a secondary video subsystem, but you do not select it in Setup.

Halt On During the power-on self-test (POST), the computer stops if the BIOS detects a hardware error. You can tell the BIOS to ignore certain errors during POST and continue the boot-up process. These are the selections:

No errors	POST does not stop for any errors.
All errors	If the BIOS detects any non-fatal error, POST stops and prompts you to take corrective action.
All, But Keyboard	POST does not stop for a keyboard error, but stops for all other errors.
All, But Diskette	POST does not stop for diskette drive errors, but stops for all other errors.
All, But Disk/Key	POST does not stop for a keyboard or disk error, but stops for all other errors.


ROM PCI/ISA BIOS (2A5IMTPD)
STANDARD CMOS SETUP
AWARD SOFTWARE, INC.
Virus Warning : Disabled
CPU Internal Cache : Enabled
External Cache : Enabled
Quick Power On Self Test : Disabled
Boot Sequence : A,C,SCSI
Swap Floppy Drive : Disabled
Boot Up Floppy Seek : Enabled
Boot Up NumLock Status : On
Memory Parity Check : Disabled
Typematic Rate Setting : Disabled
Typematic Rate (Char/Sec) : 6
Typematic Delay (Msec) : 250
Security Option : Setup
PCI/VGA Palette Snoop : Disabled
OS Select for DRAM > 64MB : Non-OS2
Report No FDD For Win95 : Yes
Video BIOS Shadow : Enabled
C8000-CBFFF Shadow : Disabled
CC000-CFFFF Shadow : Disabled
D0000-D3FFF Shadow : Disabled
D4000-D7FFF Shadow : Disabled
D8000-DBFFF Shadow : Disabled
DC000-DFFFF Shadow : Disabled
Cyrix 6x86/MII CPUID : Enabled
Esc: Quit : Select Item
F1 : Help PU/PD/+/- : Modify
F5 : Old Values (Shift)F2: Color
F6 : Load BIOS Defaults
F7 : Load Setup Defaults

Virus Warning
When enabled, you receive a warning message if a program (specifically, a virus) attempts to write to the boot sector or the partition table of the hard disk drive. You should then run an anti-virus program. Keep in mind that this feature protects only the boot sector, not the entire hard drive.

CPU Internal Cache & CPU External Cache
Cache memory is additional memory that is much faster than conventional DRAM (system memory). CPUs from 486-type on up contain internal cache memory, and most, but not all, modern PCs have additional (external) cache memory. When the CPU requests data, the system transfers the requested data from the main DRAM into cache memory, for even faster access by the CPU.

Quick Power On Self Test
Select Enabled to reduce the amount of time required to run the power-on self-test (POST). A quick POST skips certain steps. We recommend that you normally disable quick POST. Better to find a problem during POST than lose data during your work.

Boot Sequence
The original IBM PCs loaded the DOS operating system from drive A (floppy disk), so IBM PC-compatible systems are designed to search for an operating system first on drive A, and then on drive C (hard disk). However, modern computers usually load the operating system from the hard drive, and may even load it from a CD-ROM drive.

Swap Floppy Drive
This field is effective only in systems with two floppy drives. Selecting Enabled assigns physical drive B to logical drive A, and physical drive A to logical drive B.

Boot Up Floppy Seek
When Enabled, the BIOS tests (seeks) floppy drives to determine whether they have 40 or 80 tracks. Only 360-KB floppy drives have 40 tracks; drives with 720 KB, 1.2 MB, and 1.44 MB capacity all have 80 tracks. Because very few modern PCs have 40-track floppy drives, we recommend that you set this field to Disabled to save time.

Boot Up NumLock Status
Toggle between On or Off to control the state of the NumLock key when the system boots. When toggled On, the numeric keypad generates numbers instead of controlling cursor operations.

Memory Parity Check
Parity is a measure of the consistency of your system's RAM, memory chips. Plus, there is both parity and non-parity memory. At boot, the Award BIOS both sizes and tests all memory. Normally, when a parity error is detected, the BIOS will display a message describing the problem as well as the problem's location, if possible. The boot process will then terminate and you will not be able to continue until the bad chip or SIMM is located and replaced.

Disabling the Memory Parity Check allows the system to by-pass the test and allow your system to boot. You then have a choice of continuing to operate your system or attempting the remedying the problem.

Typematic Rate Setting
When Disabled, the following two items (Typematic Rate and Typematic Delay) are irrelevant. Keystrokes repeat at a rate determined by the keyboard controller in your system. When Enabled, you can select a typematic rate and typematic delay.

Typematic Rate (Chars/Sec)
When the typematic rate setting is enabled, you can select a typematic rate (the rate at which character repeats when you hold down a key) of 6, 8, 10,12, 15, 20, 24 or 30

characters per second.

Typematic Delay (Msec)
When the typematic rate setting is enabled, you can select a typematic delay (the delay before key strokes begin to repeat) of 250, 500, 750 or 1000 milliseconds.

Security Option
If you have set a password, select whether the password is required every time the System boots, or only when you enter Setup.

System — The system will not boot and access to Setup will be denied if the correct password is not entered at the prompt.

Setup — The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt.

Note: To disable security, select PASSWORD SETTING at Main Menu and then you will be asked to enter password. Do not type anything and just press Enter, it will disable security. Once the security is disabled, the system will boot and you can enter Setup freely.

PCI/VGA Palette Snoop
Normally this option is always disabled !
Nonstandard VGA display adapters such as overlay cards or MPEG video cards may not show colors properly. Setting "PCI/VGA Palette Snoop" to Enable should correct this problem. If the PCI/VGA Palette Snoop is "Enabled", any I/O access on the ISA-bus to the VGA card's palette registers will be reflected on the PCI bus. This will allow overlay cards to adapt to the changing palette colors.

OS Select for DRAM > 64MB

Non-OS/2 — If your operating system is not OS/2

OS/2 — If system DRAM is more than 64MB and if your operating system is OS/2.

Report No FDD For WIN 95
Select Yes to release IRQ6 when the system contains no floppy drive, for compatibility with Windows 95 logo certification. In the "Integrated Peripherals" menu screen, select Disabled for the Onboard FDC Controller field.

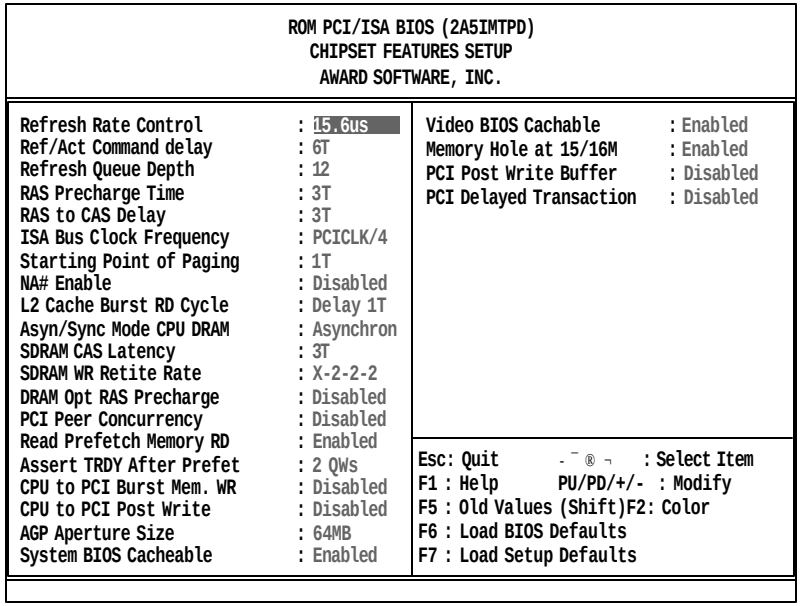
Video BIOS Shadow
Enabled this copies the video BIOS from ROM to RAM. effectively enhancing performance, and reducing the amount of upper memory available by 32KB (the C0000~C7FFF area of memory between 640 KB and 1 MB is used).

C8000-CBFFF Shadow
Enabling any of the C8000~DFFFF segments allows components to move their firmware into these upper memory segments. However your computer can lock-up doing so, because some devices don't like being shadowed at those particular 16 KB segments of upper memory.

Note - In Windows 95, double click 'Computer' within Device Manager and select 'Memory'. This will tell you what segments (if any) are being shadowed For DOS you can use MSD.EXE to see what segments are claimed.
CC000-CFFFF - D0000-D3FFF - D4000-D7FFF - D8000-DBFFF and
DC000-DFFFF - Same as above.

Cyrix 6x86/MII CPUID
When using a Cyrix CPU this option should be enabled to correctly determine the Cyrix CPU type.

Chipset Features Setup


ROM PCI/ISA BIOS (2A5IMTPD)
CHIPSET FEATURES SETUP
AWARD SOFTWARE, INC.
Refresh Rate Control : 15.6us
Ref/Act Command delay : 6T
Refresh Queue Depth : 12
RAS Precharge Time : 3T
RAS to CAS Delay : 3T
ISA Bus Clock Frequency : PCICLK/4
Starting Point of Paging : 1T
NA# Enable : Disabled
L2 Cache Burst RD Cycle : Delay 1T
Asyn/Sync Mode CPU DRAM : Asynchron
SDRAM CAS Latency : 3T
SDRAM WR Retite Rate : X-2-2-2
DRAM Opt RAS Precharge : Disabled
PCI Peer Concurrency : Disabled
Read Prefetch Memory RD : Enabled
Assert TRDY After Prefet : 2 QWs
CPU to PCI Burst Mem. WR : Disabled
CPU to PCI Post Write : Disabled
AGP Aperture Size : 64MB
System BIOS Cacheable : Enabled
Video BIOS Cachable : Enabled
Memory Hole at 15/16M : Enabled
PCI Post Write Buffer : Disabled
PCI Delayed Transaction : Disabled
Esc: Quit : Select Item
F1 : Help PU/PD/+/- : Modify
F5 : Old Values (Shift)F2: Color
F6 : Load BIOS Defaults
F7 : Load Setup Defaults

This Chipset Feature Setup screen allows you to configure the system based on the specific features of the installed chipset. This chipset manages bus speeds and access to system memory resources, such as DRAM and the external cache. It also coordinates communications between the conventional ISA bus and the PCI bus. It must be stated that these items should never need to be altered. The default settings have been chosen because they provide the best operating conditions for your system. The only time you might consider making any changes would be if you discovered that data was being lost while using your system. The first chipset settings deal with CPU access to dynamic random access memory (DRAM). The default timings have been carefully chosen and should only be altered if data is being lost. Such a scenario might well occur if your system had mixed speed DRAM chips installed so that greater delays may be required to preserve the integrity of the data held in the slower memory chips.

Refresh Rate Control
Select the period required to refresh the DRAMs, according to DRAM specifications.

Ref / Act Command Delay
Set the DRAM clock of the refresh command to refresh/active command delay.

Refresh Queue Depth
Set the depth of refresh queue.

RAS Precharge Time
The precharge time is the number of cycles it takes for the RAS to accumulate its charge before DRAM refreshes. If insufficient time is allowed, refresh may be incomplete and the DRAM may fail to retain data.
The Choice: 2T, 3T, 4T, 5T.

RAS to CAS Delay
TWhen DRAM is refreshed, both rows and columns are addressed separately. This setup item allows you to determine the timing of the transition from RAS (row address strobe) to CAS (column address strobe).
The choice: 2T, 3T, 4T, 5T.

ISA Bus Clock Frequency
You can set the speed of the AT bus at one-third or one-fourth of the CPU clock speed.
The choice: 7.159MHz, PCICLK/3, PCICLK/4.

Starting Point of Paging
This value controls the start timing of memory paging operations.
The choice: 1T, 2T, 4T, 8T.

NA# Enable
Selecting Enabled permits pipelining, in which the chipset signals the CPU for a new memory address before all data transfers for the current cycle are complete, resulting in faster performance. The choice: Enabled, Disabled.

L2 Cache Burst RD Cycle
These timing numbers are the pattern of cycles the CPU uses to read data from the cache. The choice: Normal, Delay 1T.

Asyn/Sync Mode CPU/DRAM
This feature can only be enabled when the frequency of CPU clock and the frequency of DRAM clock are the same and the skew between these two clocks should be zero. The choice: Asynchronous, Synchronous.

SDRAM CAS Latency
When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing. Do not reset this field from the default value specified by the system designer. The choice: 2T, 3T.

SDRAM WR Retire Rate
The system designer must select the correct timing for data transfers from the write buffer to memory, according to DRAM specifications
The choice: 0WS, 1WS.

DRAM Opt RAS Precharge
The precharge time is the number of cycles it takes for the RAS to accumulate its charge before DRAM refreshes. If insufficient time is allowed, refresh may be incomplete and the DRAM may fail to retain data. The choice: Enabled, Disabled.

PCI Peer Concurrency
Peer concurrency means that more than one PCI device can be active at a time. The choice: Enabled, Disabled.

RAS Precharge Time
The precharge time is the number of cycles it takes for the RAS to accumulate its charge before DRAM refreshes. If insufficient time is allowed, refresh may be incomplete and the DRAM may fail to retain data.
The Choice: 2T, 3T, 4T, 5T.

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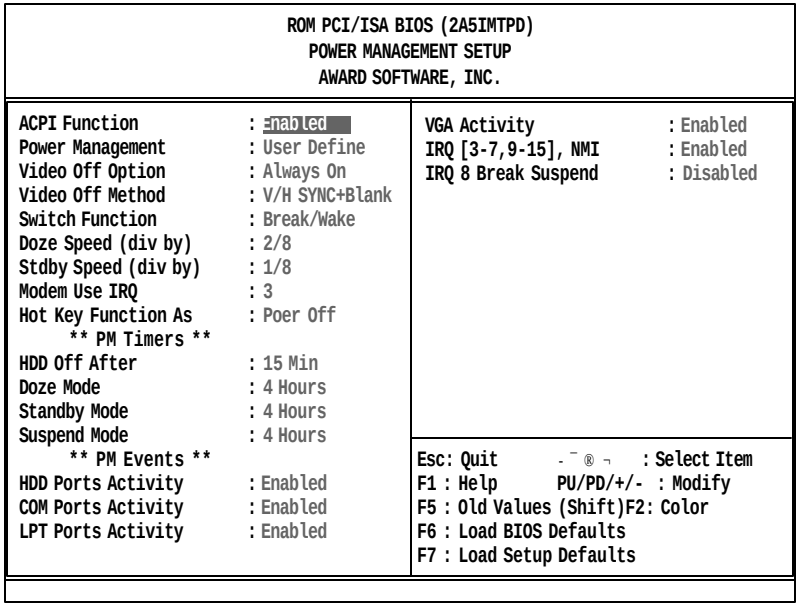
Peer concurrency means that more than one PCI device can be active at a time. The choice: Enabled, Disabled.

Power Management Setup


ROM PCI/ISA BIOS (2A5IMTPD)
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.
ACPI Function : Enabled
Power Management : User Define
Video Off Option : Always On
Video Off Method : V/H SYNC+Blank
Switch Function : Break/Wake
Doze Speed (div by) : 2/8
Stdby Speed (div by) : 1/8
Modem Use IRQ : 3
Hot Key Function As : Poer Off
** PM Timers **
HDD Off After : 15 Min
Doze Mode : 4 Hours
Standby Mode : 4 Hours
Suspend Mode : 4 Hours
** PM Events **
HDD Ports Activity : Enabled
COM Ports Activity : Enabled
LPT Ports Activity : Enabled
VGA Activity : Enabled
IRQ [3-7,9-15], NMI : Enabled
IRQ 8 Break Suspend : Disabled
Esc: Quit : Select Item
F1 : Help PU/PD/+/- : Modify
F5 : Old Values (Shift)F2: Color
F6 : Load BIOS Defaults
F7 : Load Setup Defaults

ACPI Function
Select Enabled only if your computer s operating system supports the Advanced Configuration and Power Interface (ACPI) specification.
Currently, Windows 98 and Windows NT 5.0 (beta) support ACPI.

Power Management
There are 4 selections for Power Management, 3 of which have fixed mode :

Disable (default)	No power management. Disables all four modes
Min. Power Saving	Minimum power management. Doze Mode = 1 hr. Standby Mode = 1 hr., Suspend Mode = 1 hr., and HDD Power Down = 15 min.
Max. Power Saving	Maximum power management -- ONLY AVAILABLE FOR SL CPU'S. Doze Mode = 1 min., Standby Mode = 1 min., Suspend Mode = 1 min., and HDD Power Down = 1 min.
User Defined	Allows you to set each mode individually. When not disabled, each of the ranges are from 1 min. to 1 hr. except for HDD Power Down which ranges from 1 min. to 15 min. and disable.

Video Off Option
When enabled, this feature allows the VGA adapter to operate in a power saving mode.This determines the manner in which the monitor is blanked.

Always On	Monitor will remain on during power saving modes.
Suspend --> Off	Monitor blanked when the systems enters the Suspend mode.
Susp,Stby --> Off	Monitor blanked when the system enters either Suspend or Standby modes.
All Modes --> Off	Monitor blanked when the system enters any power saving mode.

Video Off Method
This determines the manner in which the monitor is blanked.

V/H SYNC+Blank	causes the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.
Blank Screen	This option only writes blanks to the video buffer.
DPMS	Initial display power management signaling.

Switch Function
You can choose whether or not to permit your system to enter complete Suspend mode. Suspend mode offers greater power savings, with a correspondingly longer awakening period. The choice: Deturbo, Break, Break/Wake, Disabled.

Doze Speed (div by)
Sets the CPU's speed during Doze mode. The speed is reduced to a fraction of the CPU's normal speed. The divisors range from 1 to 8 The choice: 1~8.

Stdby Speed (div by)
Select a divisor to reduce the CPU speed during Standby mode to a fraction of the full CPU speed. The speed is reduced to a fraction of the CPU's normal speed. The divisors range from 1 to 8-0. The choice: 1~8

Modem Use IRQ
Name the interrupt request (IRQ) line assigned to the modem (if any) on your system. Activity of the selected IRQ always awakens the system.

Hot Key Function As
Select Enabled if your system has a hot key for soft power off.
The choice: Enabled, Disabled.

PM Timers

The following four modes are Green PC power saving functions which are only user configurable when User Defined Power Management has been selected. See above for available selections.

HDD Off After
By default, this item is Disabled, meaning that no matter the mode the rest of the system, the hard drive will remain ready. Otherwise, you have a range of choices from 1 to 15 minutes or Suspend. This means that you can elect to have your hard disk drive be turned off after a selected number of minutes or when the rest of the system goes into a Suspend mode.

Doze Mode
When enabled and after the set time of system inactivity, the CPU clock will run at slower speed while all other devices still operate at full speed.

Standby Mode
When enabled and after the set time of system inactivity, the fixed disk drive and the video would be shut off while all other devices still operate at full speed.

Suspend Mode
When enabled and after the set time of system inactivity, all devices except the CPU will be shut off.

PM Events

You may disable activity monitoring of some common I/O events and interrupt requests so they do not wake up the system. The default wake-up event is keyboard activity.

When On (or named, in the case of LPT & COM), any activity from one of the listed system peripheral devices or IRQs wakes up the system.

HDD Ports Activity
When set to On (default), any event occurring at a HDD (serial) port will awaken a system which has been powered down.

COM Port Activity
When set to On (default), any event occurring at a hard or floppy drive port will awaken a system which has been powered down.

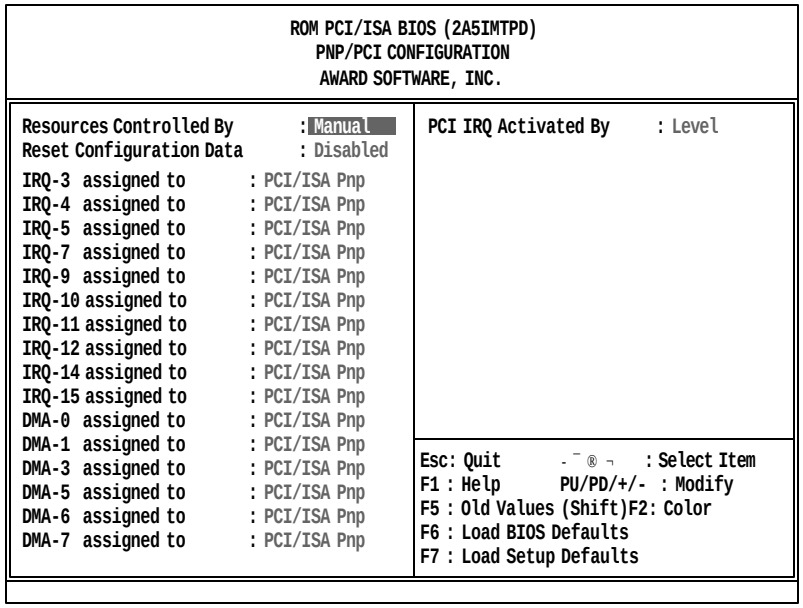
LPT Port Activity
When set to On (default), any event occurring at a LPT (printer) port will awaken a system which has been powered down.

VGA Activity
When set to On (default), any event occurring at VGA will awaken a system which has been powered down.

IRQ [3-7, 9-15], NMI
The following is a list of IRQ's, Interrupt ReQuests, which can be exempted much as the COM ports and LPT ports above can. When an I/O device wants to gain the attention of the operating system, it signals this by causing an IRQ to occur. When the operating system is ready to respond to the request, it interrupts itself and performs the service. As above, the choices are On and Off. When set On, activity will neither prevent the system from going into a power management mode nor awaken it.

IRQ 8 Break Suspend
You can Enable or Disable monitoring of IRQ8 (the Real Time Clock) so it does not awaken the system from Suspend mode.

PNP/PCI Configuration


ROM PCI/ISA BIOS (2A5IMTPD)
PNP/PCI CONFIGURATION
AWARD SOFTWARE, INC.
Resources Controlled By : Manual
Reset Configuration Data : Disabled
IRQ-3 assigned to : PCI/ISA Pnp
IRQ-4 assigned to : PCI/ISA Pnp
IRQ-5 assigned to : PCI/ISA Pnp
IRQ-7 assigned to : PCI/ISA Pnp
IRQ-9 assigned to : PCI/ISA Pnp
IRQ-10 assigned to : PCI/ISA Pnp
IRQ-11 assigned to : PCI/ISA Pnp
IRQ-12 assigned to : PCI/ISA Pnp
IRQ-14 assigned to : PCI/ISA Pnp
IRQ-15 assigned to : PCI/ISA Pnp
DMA-0 assigned to : PCI/ISA Pnp
DMA-1 assigned to : PCI/ISA Pnp
DMA-3 assigned to : PCI/ISA Pnp
DMA-5 assigned to : PCI/ISA Pnp
DMA-6 assigned to : PCI/ISA Pnp
DMA-7 assigned to : PCI/ISA Pnp
PCI IRQ Activated By : Level
Esc: Quit : Select Item
F1 : Help PU/PD/+/- : Modify
F5 : Old Values (Shift)F2: Color
F6 : Load BIOS Defaults
F7 : Load Setup Defaults

This section describes configuring the PCI bus system. PCI, or Personal Computer Interconnect, is a system which allows I/O devices to operate at speeds nearing the speed the CPU itself uses when communicating with its own special components.

Resources Controlled By
The Award Plug and Play BIOS can automatically configure all the boot and Plug and Play-compatible devices. If you select Auto, all the interrupt request (IRQ) and DMA assignment fields disappear, as the BIOS automatically assigns them. Choice: Auto and Manual.

Reset Configuration Data
Normally, you leave this field Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the operating system cannot boot. Choice: Enabled and Disabled.

IRQ n Assigned to
When resources are controlled manually, assign each system interrupt as one of the following types, depending on the type of device using the interrupt:

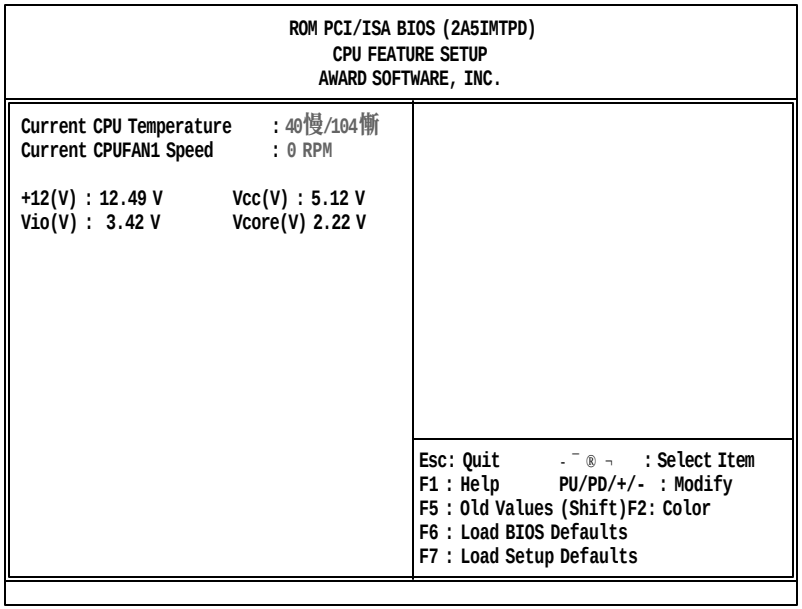
Legacy ISA	Devices compliant with the original PC AT bus specification, requiring a specific interrupt (such as IRQ4 for serial port 1).
PCI/ISA PnP	Devices compliant with the Plug and Play standard, whether designed for PCI or ISA bus architecture.

DMA n Assigned to
When resources are controlled manually, assign each system DMA channel as one of the following types, depending on the type of device using the interrupt:

Legacy ISA	Devices compliant with the original PC AT bus specification, requiring a specific DMA channel
PCI/ISA PnP	Devices compliant with the Plug and Play standard, whether designed for PCI or ISA bus architecture.

PCI IRQ Activated By
This sets the method by which the PCI bus recognizes that an IRQ service is being requested by a device. Under all circumstances, you should retain the default configuration unless advised otherwise by your system's manufacturer.
The choice: Level, Edge.

Hardware Monitor


ROM PCI/ISA BIOS (2A5IMTPD)
CPU FEATURE SETUP
AWARD SOFTWARE, INC.
Current CPU Temperature : 40慢/104慚
Current CPUFAN1 Speed : 0 RPM
+12(V) : 12.49 V Vcc(V) : 5.12 V
Vio(V) : 3.42 V Vcore(V) 2.22 V
Esc: Quit - ¯ ® ¬ : Select Item
F1 : Help PU/PD/+/- : Modify
F5 : Old Values (Shift)F2: Color
F6 : Load BIOS Defaults
F7 : Load Setup Defaults

Current CPU Temperature
A onboard sensor underneath the CPU monitors the current CPU temperature.

Current CPU Fan Speed
When using the onboard CPU Fan power connector the board can deduct the actual rounds per minute (RPM) of the installed CPU Fan

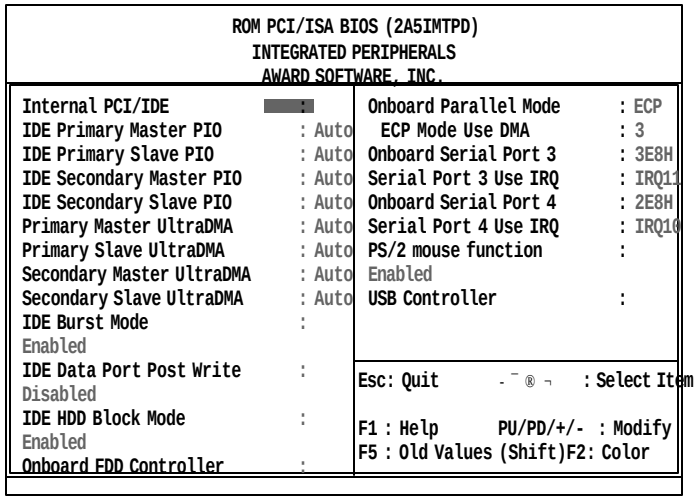
+12(V)
Measured external power for Serial port, FAN etc should be ~ +12 V

V_{CC}(V)
Measured external power supply to board should be ~ +5 V

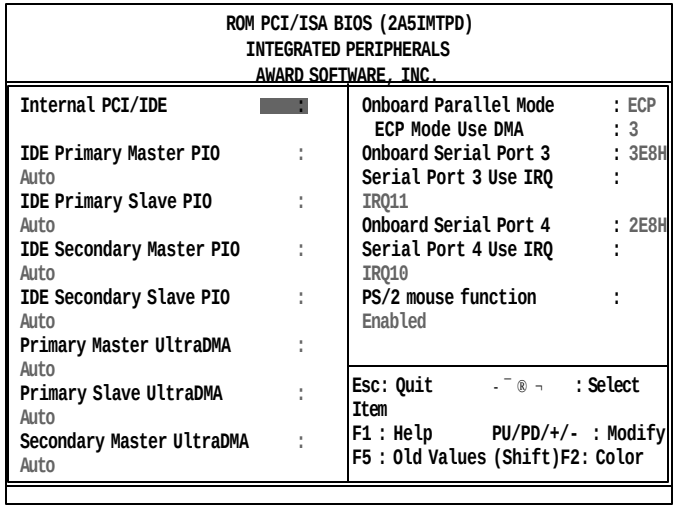
V_{IO}(V)
Measured power to DIMM, Chipset and Slot 1 Cache, should be ~ 3.5 V

V_{CORE}(V)
Measured power to CPU core, depends on type of CPU and jumper settings

Integrated Peripherals (PIM-582 version)


ROM PCI/ISA BIOS (2A5IMTPD)
INTEGRATED PERIPHERALS
AWARD SOFTWARE, INC.
Internal PCI/IDE : Auto
IDE Primary Master PIO : Auto
IDE Primary Slave PIO : Auto
IDE Secondary Master PIO : Auto
IDE Secondary Slave PIO : Auto
Primary Master UltraDMA : Auto
Primary Slave UltraDMA : Auto
Secondary Master UltraDMA : Auto
Secondary Slave UltraDMA : Auto
IDE Burst Mode : Enabled
IDE Data Port Post Write : Disabled
IDE HDD Block Mode : Enabled
Onboard FDD Controller :
Onboard Parallel Mode : ECP
ECP Mode Use DMA : 3
Onboard Serial Port 3 : 3E8H
Serial Port 3 Use IRQ : IRQ11
Onboard Serial Port 4 : 2E8H
Serial Port 4 Use IRQ : IRQ10
PS/2 mouse function : Enabled
USB Controller :
Esc: Quit - ¯ ® ¬ : Select Item
F1 : Help PU/PD/+/- : Modify
F5 : Old Values (Shift)F2: Color

Integrated Peripherals (PIM-582C version)


ROM PCI/ISA BIOS (2A5IMTPD)
INTEGRATED PERIPHERALS
AWARD SOFTWARE, INC.
Internal PCI/IDE : Auto
IDE Primary Master PIO : Auto
IDE Primary Slave PIO : Auto
IDE Secondary Master PIO : Auto
IDE Secondary Slave PIO : Auto
Primary Master UltraDMA : Auto
Primary Slave UltraDMA : Auto
Secondary Master UltraDMA : Auto
Onboard Parallel Mode : ECP
ECP Mode Use DMA : 3
Onboard Serial Port 3 : 3E8H
Serial Port 3 Use IRQ : IRQ11
Onboard Serial Port 4 : 2E8H
Serial Port 4 Use IRQ : IRQ10
PS/2 mouse function : Enabled
Esc: Quit - ¯ ® ¬ : Select Item
F1 : Help PU/PD/+/- : Modify
F5 : Old Values (Shift)F2: Color

Internal PCI / IDE
This chipset contains an internal PCI IDE interface with support for two IDE channels. The choice: Primary, Secondary, Both.

IDE Primary/Secondary Master/Slave PIO
The four IDE PIO (Programmed Input / Output) fields let you set a PIO mode (0-4) for each of the four IDE devices that the onboard IDE interface supports. Modes 0 through 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each device.
The choice: Auto, Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

IDE Primary/Secondary Master/Slave UDMA
UDMA (Ultra DMA) is a DMA data transfer protocol that utilizes ATA commands and the ATA bus to allow DMA commands to transfer data at a maximum burst rate of 33 MB/s. When you select Auto in the four IDE UDMA fields (for each of up to four IDE devices that the internal PCI IDE interface supports), the system automatically determines the optimal data transfer rate for each IDE device. The choice: Auto, Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

IDE Burst Mode
Selecting Enabled reduces latency between each drive read/write cycle, but may cause instability in IDE subsystems that cannot support such fast performance. If you are getting disk drive errors, try setting this value to Disabled. This field does not appear when the Internal PCI/IDE field, above, is Disabled. The choice: Enabled, Disabled.

IDE Data Port Post Write
Selecting Enabled speeds up processing of drive reads and writes, but may cause instability in IDE subsystems that cannot support such fast performance. If you are getting disk drive errors, try setting this value to Disabled
The choice: Enabled, Disabled.

IDE HDD Block Mode
The chipset contains a PCI IDE interface with support for two IDE channels. Select Enabled to activate the primary and/or secondary IDE interface. Select Disabled to deactivate this interface, if you install a primary and/or secondary add-in IDE interface IDE interface. Enabled : Secondary HDD controller used Disabled : Secondary HDD controller not used.

Onboard FDD Controller
This should be enabled if your system has a floppy disk drive (FDD) installed on the system board and you wish to use it. Even when so equipped, if you add a higher performance controller, you will need to disable this feature.
The choice: Enabled, Disabled.

Onboard Serial Port 1/Port 2
This item allows you to determine access onboard serial port 1/port 2 controller with which I/O address. The choice: 3F8/IRQ4, 2E8/IRQ3, 3E8/IRQ4, 2F8/IRQ3, Disabled, Auto.

IR Address Select
This item allows you to determine access onboard IR port controller with which I/O address. The choice: 3F8, 2E8, 3E8, 2F8 and Disabled.

IR Mode
Offers a selection of two different types of infrared ports.
IrDA : Standard Infra Red Port
ASKIR : Amplitude Shift Keyed Infrared Port

IR IRQ Select
Select Interuppt for IR port. Options 3, 4, 10, 11.

Onboard Parallel Port
Select a logical LPT port name and matching address for the physical parallel (printer) port.

Parallel Port Mode
Select an operating mode for the onboard parallel (printer) port. Select SPP unless you are certain your hardware and software both support one of the other available modes.
The choice: SPP, EPP, ECP, ECP+E PP.

ECP Mode Use DMA
Select a DMA channel for the parallel port for use during ECP mode.
The choice: 3, 1.

Onboard Serial Port 3/Port 4
This item allows you to determine access onboard serial port 3 / port 4 controller with which I/O address. The choice for both ports
I/O Address: 3F8/2E8/3E8/2F8, IRQ : 3/4/10/11

PS/2 mouse function
If your system has a PS/2 mouse port and you install a serial pointing device, select Disabled. The choice: Enabled, Disabled.

USB Controller
Select Enabled if your system contains a Universal Serial Bus (USB) controller and you have USB peripherals. The choice: Enabled, Disabled.

USB Keyboard Support
Choice enable, disable.

Init Display First
This item allows you to decide to active which bus first (PCI Slot or AGP first). The choice: PCI Slot, AGP.

VGA Shared Memory Size (PIM-582 only !)
Specify the size of system memory to allocate for video memory, from 1 MB to 8 MB. The choice: 1MB, 2MB, 4MB, 8MB.

POST Codes

During the power-on self test (POST), the BIOS either sounds a beep code or displays a message when it detects a correctable error. An error message may be followed by a prompt to press F1 to continue or press DEL to enter Setup.

Audible Error Messages

Currently the only implemented beep code indicates that a video error has occurred and the BIOS cannot initialize the video screen to display any additional information. This beep code consists of a single long beep followed by two short beeps.

Visible Error Messages

BIOS ROM checksum error - System halted
The checksum of the BIOS code in the BIOS chip is incorrect, indicating the BIOS code may have become corrupt. Contact your system dealer to replace the BIOS.

CMOS battery failed
CMOS battery is no longer functional. Contact your system dealer for a replacement battery.

CMOS checksum error - Defaults loaded
Checksum of CMOS is incorrect, so the system loads the default equipment configuration. A checksum error may indicate that CMOS has become corrupt. This error may have been caused by a weak battery. Check the battery and replace if necessary.

CPU at nnnn
Displays the running speed of the CPU.

Display switch is set incorrectly
The display switch on the motherboard can be set to either monochrome or color. This message indicates the switch is set to a different setting than indicated in Setup. Determine which setting is correct, and then either turn off the system and change the jumper, or enter Setup and change the VIDEO selection.

Press ESC to skip memory test
The user may press Esc to skip the full memory test.

Floppy disk(s) fail
Cannot find or initialize the floppy drive controller or the drive. Make sure the controller is

installed correctly. If no floppy drives are installed, be sure the Diskette Drive selection in Setup is set to NONE or AUTO.

HARD DISK initializing
Please wait a moment...
Some hard drives require extra time to initialize.

HARD DISK INSTALL FAILURE
Cannot find or initialize the hard drive controller or the drive. Make sure the controller is installed correctly. If no hard drives are installed, be sure the Hard Drive selection in Setup is set to NONE.

Hard disk(s) diagnosis fail
The system may run specific disk diagnostic routines. This message appears if one or more hard disks return an error when the diagnostics run.

Keyboard error or no keyboard present
Cannot initialize the keyboard. Make sure the keyboard is attached correctly and no keys are pressed during POST. To purposely configure the system without a keyboard, set the error halt condition in Setup to HALT ON ALL, BUT KEYBOARD. The BIOS then ignores the missing keyboard during POST.

Keyboard is locked out - Unlock the key
This message usually indicates that one or more keys have been pressed during the keyboard tests. Be sure no objects are resting on the keyboard.

Memory Test :
This message displays during a full memory test, counting down the memory areas being tested.

Memory test fail
If POST detects an error during memory testing, additional information appears giving specifics about the type and location of the memory error.

Override enabled - Defaults loaded
If the system cannot boot using the current CMOS configuration, the BIOS can override the current configuration is a set of BIOS defaults designed for the most stable, minimal-performance system operations.

Press TAB to show POST screen
System OEMs may replace the Award BIOS POST display with their own proprietary display. Including this message in the OEM display permits the operator to switch between the OEM display and the default POST display.

Primary master hard disk fail
POST detects an error in the primary master IDE hard drive.

Primary slave hard disk fail
POST detects an error in the secondary master IDE hard drive.

Secondary master hard disk fail
POST detects an error in the primary slave IDE hard drive.

Secondary slave hard disk fail
POST detects an error in the secondary slave IDE hard drive.

POST Code Error Messages

The following codes are not displayed on the screen. They can only be viewed on the LED display of a so called POST card. The codes are listened in the same order as the according functions are executed at PC startup. If you have access to a POST Card reader, you can watch the system perform each test by the value that's displayed. If the system hangs (if there's a problem) the last value displayed will give you a good idea where and what went wrong, or what's bad on the system board.

CODE	CHECK	DESCRIPTION OF CHECK
C0	Turn Off Chipset	OEM Specific-Cache control Cache
01	Processor Test 1	Processor Status (1FLAGS) Verification. Tests the following processor status flags:carry, zero, sign, overflow, The BIOS sets each flag, verifies they are set, then turns each flag off and verifies it is off.
02	Processor Test 2	Read/Write/Verify all CPU registers except SS, SP, and BP with data pattern FF and 00.
03	Initialize Chips	Disable NMI, PIE, AIE, UEI, SQWV Disable video, parity checking, DMA Reset math coprocessor Clear all page registers, CMOS shutdown byte Initialize timer 0, 1, and 2, including set EISA timer to a known state Initialize DMA controllers 0 and 1 Initialize interrupt controllers 0 and 1 Initialize EISA extended registers.
04	Test Memory Refresh Toggle	RAM must be periodically refreshed to keep the memory from decaying. This function ensures that the memory refresh function is working properly.
05	Blank video Initialize keyboard	Keyboard controller initialization
06	Reserved	
07	Test CMOS Interface and Battery Status	Verifies CMOS is working correctly, detects bad battery.
BE	Chipset Default Initialization	Program chipset registers with power on BIOS defaults.
C1	Memory presence test	OEM Specific-Test to size on-board memory
C5	Early Shadow	OEM Specific-Early Shadow enable for fast boot.
C6	Cache presence test	External cache size detection
08	Setup low memory	Early chip set initialization Memory presence test OEM chip set routines Clear low 64K of memory Test first 64K memory.
09	Early Cache Initialization	Cyrix CPU initialization Cache initialization
0A	Setup Interrupt Vector Table	Initialize first 120 interrupt vectors with SPURIOUS_INT_HDLR and initialize INT 00h-1Fh according to INT_TBL
0B	Test CMOS RAM Checksum	Test CMOS RAM Checksum, if bad, or insert key pressed, load defaults.
0C	Initialize keyboard	Detect type of keyboard controller (optional) Set NUM_LOCK status.
0D	Initialize Video Interface	Detect CPU clock. Read CMOS location 14h to find out type of video in use. Detect and Initialize Video Adapter.
0E	Test Video Memory	Test video memory, write sign-on message to screen. Setup shadow RAM - Enable shadow according to Setup.
0F	Test DMA Controller 0	BIOS checksum test. Keyboard detect and initialization
10	Test DMA Controller 1	

11	Test DMA Page Registers	Test DMA Page Registers.
12-13	Reserved	
14	Test Timer Counter 2	Test 8254 Timer 0 Counter 2
15	Test 8259-1 Mask Bits	Verify 8259 Channel 1 masked interrupts by alternately turning off and on the interrupt lines.
16	Test 8259-2 Mask Bits	Verify 8259 Channel 2 masked interrupts by alternately turning off and on the interrupt lines.
17	Test Stuck 8259's Interrupt Bits	Turn off interrupts then verify no interrupt mask register is on.
18	Test 8259 Interrupt Functionality	Force an interrupt and verify the interrupt occurred.
19	Test Stuck NMI Bits (Parity/IO Check)	Verify NMI can be cleared.
1A		Display CPU clock
1B-1E	Reserved	
1F	Set EISA Mode	If EISA non-volatile memory checksum is good, execute EISA initialization. If not, execute ISA tests an clear EISA mode flag. Test EISA Configuration Memory Integrity (checksum & communication interface).
20	Enable Slot 0	Initialize slot 0 (System Board).
21-2F	Enable Slots 1-15	Initialize slots 1 through 15.
30	Size Base and Extended Memory	Size base memory from 256K to 640K and extended memory above 1MB.
31	Test Base and Extended Memory	Test base memory from 256K to 640K and extended memory above 1MB using various patterns. NOTE: This test is skipped in EISA mode and can be skipped with ESC key in ISA mode.
32	Test EISA Extended Memory	If EISA Mode flag is set then test EISA memory found in slots initialization. NOTE: This test is skipped in ISA mode and can be skipped with ESC key in EISA mode.
33-3B	Reserved	
3C		Setup Enabled
3D	Initialize & Install Mouse	Detect if mouse is present, initialize mouse, install interrupt vectors.
3E	Setup Cache Controller	Initialize cache controller.
3F	Reserved	
BF	Chipset Initialization	Program chipset registers with Setup values
40		Display virus protect disable or enable
41	Initialize Floppy Drive & Controller	Initialize floppy disk drive controller and any drives.
42	Initialize Hard Drive & Controller	initialize hard drive controller and any drives.
43	Detect & Initialize Serial/Parallel Ports	Initialize any serial and parallel ports (also game port).
44	Reserved	

45	Detect & Initialize Math Coprocessor	Initialize math coprocessor.
46	Reserved	
47	Reserved	
48-4D	Reserved	
4E	Manufacturing POST Loop Display Messages	Reboot if Manufacturing POST Loop pin or is set. Otherwise display any messages (i.e., any non-fatal errors that were detected during POST) and enter Setup.
4F	Security Check	Ask password security (optional).
50	Write CMOS	Write all CMOS values back to RAM and clear screen.
51	Pre-boot Enable	Enable parity checker Enable NMI, Enable cache before boot.
52	Initialize Option ROMs	Initialize any option ROMs present from C8000h to EFFFFh. NOTE: When FSCAN option is enabled, ROMs initialize from C8000h to F7FFFh.
53	Initialize Time Value	Initialize time value in 40h: BIOS area.
60	Setup Virus Protect	Setup virus protect according to Setup
61	Set Boot Speed	Set system speed for boot
62	Setup NumLock	Setup NumLock status according to Setup
63	Boot Attempt	Set low stack Boot via INT 19h.
B0	Spurious	If interrupt occurs in protected mode.
B1	Unclaimed NMI	If unmasked NMI occurs, display: Press F1 to disable NMI, F2 reboot.
E1-EF	Setup Pages	E1- Page 1, E2 - Page 2, etc.
FF	Boot	

Howto : Flash the BIOS

What do you need:

To flash your BIOS you'll need

1) a xxxxx.bin file that is a file image of the new BIOS

2) AWDFLASH.EXE a utility that can write the data-file into the BIOS chip.

The procedure:

Create a new, clean DOS (6 or higher) bootable floppy with "format a: /s".

Copy flash utility and the BIOS image file to this disk.

Turn your computer off. Insert the floppy you just created and boot the computer. As it boots up, hit the [DEL] key to enter the CMOS setup. Go to "LOAD SETUP (or BIOS) DEFAULTS," and then save and exit the setup program. Continue to boot with the floppy disk.

Type "AWDFLASH" to execute the flash utility. When prompted, enter the name of the new BIOS image and begin the flash procedure. Note: If you reboot now, you may not be able to boot again.

After the flash utility is complete, reboot the system.

Warranty

This product is warranted to be in good working order for a period of one year from the date of purchase. Should this product fail to be in good working order at any time during this period, we will, at our option, replace or repair it at no additional charge except as set forth in the following terms. This warranty does not apply to products damaged by misuse, modifications, accident or disaster.

Vendor assumes no liability for any damages, lost profits, lost savings or any other incidental or consequential damage resulting from the use, misuse of, or inability to use this product. Vendor will not be liable for any claim made by any other related party.

Return authorization must be obtained from the vendor before returned merchandise will be accepted. Authorization can be obtained by calling or faxing the vendor and requesting a Return Merchandise Authorization (RMA) number. Returned goods should always be accompanied by a clear problem description.